

IN THE CLAIMS:

Please CANCEL claims 39 and 40 without prejudice to or disclaimer of the recited subject matter.

Please AMEND claims 35 and 38, and ADD new claims 41-50, as follows. For the Examiner's convenience, all claims currently pending in this application have been reproduced below:

1-34. (Previously Cancelled)

35. (Currently Amended) A method of manufacturing a projection exposure apparatus having a pulse laser, said method comprising the steps of:

measuring an optical performance of a projection optical system, by producing an interference fringe which bears information related to aberration of the projection optical system, by use of a harmonic of a laser having a coherency higher than that of ~~a~~ the pulse laser, laser; and ~~then by analyzing~~ detecting the interference fringe,

wherein a wavelength of the harmonic of the laser corresponds to a ~~design~~ wavelength of the projection optical system and also corresponds to a wavelength of light from the pulse laser.

36. (Previously Added) A method according to claim 35, wherein the pulse laser comprises an excimer laser.

37. (Previously Added) A method according to claim 36, wherein the excimer laser includes means for narrowing a bandwidth of the light and for changing the wavelength of the light.

38. (Currently Amended) A method of manufacturing a projection exposure apparatus having a KrF excimer laser, said method comprising the steps of:

measuring an optical performance of a projection optical system, by producing an interference fringe which bears information related to aberration of the projection optical system, by use of a harmonic of an Argon ~~laser~~, ion laser; and

~~then by analyzing~~ detecting the interference fringe,

wherein a wavelength of the harmonic of the Argon ion laser corresponds to a ~~design wavelength of the projection optical system and also corresponds to a~~ wavelength of light from the KrF excimer laser.

39. (Cancelled)

40. (Cancelled)

41. (New) A method according to claim 38, wherein the excimer laser includes means for narrowing a bandwidth of the light and for changing the wavelength of the light.

42. (New) A method of manufacturing a projection exposure apparatus having a pulse laser, said method comprising the steps of:

measuring an optical performance of a projection optical system, by producing an interference fringe which bears information related to aberration of the projection optical system, by use of a harmonic of a laser providing a continuous wave; and

detecting the interference fringe;

wherein a wavelength of the harmonic of the laser corresponds to a wavelength of light from the pulse laser.

43. (New) A method according to claim 42, wherein the pulse laser comprises an excimer laser.

44. (New) A method according to claim 43, wherein the excimer laser includes means for narrowing a bandwidth of the light and for changing the wavelength of the light.

45. (New) In a method of manufacturing a projection exposure apparatus having a KrF excimer laser, the improvement comprising:

measuring an optical performance of a projection optical system, by producing an interference fringe which bears information related to aberration of the projection optical system, by use of a secondary harmonic of a laser having a wavelength of 494.5 nm,

wherein a wavelength of the harmonic of the laser corresponds to a wavelength of light from the KrF excimer laser.

46. (New) A method according to claim 45, wherein the excimer laser includes means for narrowing a bandwidth of the light and for changing the wavelength of the light.

47. (New) A method according to claim 35, further comprising adjusting the projection optical system in accordance with a result of the detection of the interference fringe.

48. (New) A method according to claim 38, further comprising adjusting the projection optical system in accordance with a result of the detection of the interference fringe.

49. (New) A method according to claim 42, further comprising adjusting the projection optical system in accordance with a result of the detection of the interference fringe.

50. (New) A method according to claim 45, further comprising adjusting the projection optical system in accordance with a result of the detection of the interference fringe.